

# Space News Roundup

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National Aeronautics and Space Administration

## News Briefs

### 'Bold goals' suggested

Former NASA Administrator Thomas O. Paine, chairman of the National Commission on space, told the Space Business Roundtable recently that NASA needs "bold goals" for the future. "NASA will be back in business, doing a very good and safe and reliable job," he said. The Commission is due to report in mid-April to the President and the Congress on America's future goals in space. Paine said the Commission will recommend that the nation push forward with space transportation and seek ways to reduce payload costs to low Earth orbit from \$2,000 to \$200 per pound.

### PSCN goes online

The Program Support Communications Network, which went partially operational on March 31, will tie together six NASA centers and dramatically improve the quality of Federal Telecommunications System (FTS) telephone calls, according to Mission Support Director Ronald L. Berry. The PSCN will serve as the Agency's prime network for transmission of voice, video and data. Initially, JSC will be tied to the Marshall, Goddard, Kennedy, Langley and Dryden centers, as well as Headquarters, through the PSCN. Ames Research Center will be up on the network on a temporary basis during initial stages of the changeover. With the cutover of FTS to the new network, Berry said, JSC users will have a 20 percent increase in access trunks, making it much easier to dial into the system. Audio quality between the connected centers will also be greatly improved. Users will continue to dial "87" for access to FTS.

### Airflow tests begin

New tests at the Dryden Flight Research Facility with an F-14 fighter may aid in the design of future small transport aircraft. A special wing covering, or glove, fitted to the F-14 is expected to smooth the airflow over the wing and lead to more efficient flight at subsonic and transonic speeds. The glove is located over the leading edge and top of the wing. Researchers hope to gain information on airflow close to the wing surface, known as boundary layer flow. The results will be added to a data base for airplane designers to draw on as they plan new business and small commercial transports. The F-14 is an ideal testbed for these experiments since it offers variable sweep wings, allowing tests with sweep conditions from 20 to 35 degrees. The glove design was aided by the Boeing Commercial Airplane Co., and the program is part of a cooperative effort with the Langley Research Center.

### Giotto Earth-bound

The European Space Agency's Giotto probe has been retargeted and will fly within 12,400 miles of Earth in 1990. The probe successfully carried out the first closeup observations of Halley's Comet in early March. With the probe on a stable trajectory back towards Earth, ESA is now considering whether to assign other duties to Giotto. In the meantime, the probe will be put into a long duration hibernation mode. At launch, Giotto had 69 kilograms of hydrazine aboard for its maneuvering rockets. Due to its precise trajectory, only 9 kilograms were used between the launch and the close encounter with the comet. Some 33 kilograms of hydrazine were used during the retargeting maneuvers on March 19, 20 and 21, ESA said.

### Swap Shop deadline

The next issue of the Space News Roundup will be dated May 2. The deadline for submissions for the swap shop is April 23.



Analysis was underway at JSC last week on a copy of the tape from the 51-L Modular Auxiliary Data System (MADS). Shown with the tape are (right) Luther Palmer of the Thermal Analysis Section, Structures and Thermal Division, and Stan Williams of Lockheed.

## Columbia to support VAFB validations

NASA plans to ferry the Orbiter *Columbia* to Vandenberg Air Force Base, Calif., in mid-July to support launch site validation testing in preparation for the first west coast Space Shuttle launch.

Presently at the Kennedy Space Center undergoing postflight servicing and a series of modifications, *Columbia* is expected to remain at the California launch site through early November.

Tests will closely parallel those performed at Kennedy Space Center prior to *Columbia*'s first flight on the maiden Space Shuttle mission in April 1981.

*Columbia* will be flown to Vandenberg atop the modified Boeing 747 Shuttle Carrier Aircraft. Initial processing to remove ferry flight equipment and ready the ship for vehicle stacking will be performed at the Orbiter Maintenance and Checkout Facility.

*Columbia* then will be moved to the launch pad and mated with a set of solid rocket boosters and an external tank for integrated vehicle testing including the loading of cryogenic propellants in a "wet" countdown demonstration test.

No flight readiness firing is planned during this phase of Vandenberg site testing, but such a test firing is baselined as part of the first launch flow.

Processing on *Columbia* at KSC over the next 3 months will include

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## Design contracts awarded for X-31

NASA and the Department of Defense have jointly announced the award of the first seven contracts for conceptual design work on the National Aerospace Plane, now designated the X-31.

The contracts call for research and development in propulsion, aerodynamics, computational fluid mechanics, advanced structures and high-temperature materials leading to the design of a flight research vehicle.

The potential contract value of the studies is over \$450 million.

The aerospace plane would be able to cruise within the upper atmosphere at hypersonic speeds or ascend directly into orbit after takeoff from a runway. Its potential capability to fly from the United

States to Japan in about two hours has led President Reagan to characterize the vehicle as the "Orient Express."

As a space launch vehicle, the aerospace plane could lead to large reductions in the cost of placing payloads into orbit.

Contracts are being awarded in propulsion and airframe design. The propulsion awards, approximately \$175 million each, are being made to the nation's two largest engine companies, General Electric Co., Aircraft Engine Business Group, Cincinnati, and United Technologies Corp., Pratt & Whitney Aircraft Group, of West Palm Beach, FL. Both companies will design and develop flight test modules of the large scramjet air-

breathing engines necessary for the X-31.

The airframe contracts, each with a potential value of up to \$32 million, have been awarded to the Boeing Military Airplane Co., Seattle; the Fort Worth Division of General Dynamics Corp., Fort Worth; the Lockheed California Co., Burbank; the McDonnell Douglas Corp., St. Louis; and Rockwell International Corp., Los Angeles.

During the first year, a broad design competition will be conducted with two or three airframe designers being selected for further studies. The winners of that competition will then design and fabricate certain critical components of a vehicle and produce a preliminary

flight design for the X-31.

Final selection of contractors to fabricate the flight demonstrator vehicle is planned in 42 months, or around October, 1989. All five corporations have organized special interdisciplinary teams to support the dual air and space nature of the program.

The selection process was officiated by Defense Advance Research Projects Agency Director Robert C. Duncan and implemented by the Air Force System Command under Gen. Lawrence Skantze.

DARPA is managing the key technology development phase of the program for the Department of Defense and NASA.

## Remembering Marilyn Bockting

*Excellence award highlights motivation and competence*

Marilyn Bockting was one of the first women at JSC to cross over from clerical work to management.

She did it without benefit of a technical degree in an atmosphere where technical education counts for much. She did it before upward mobility programs such as PRIDE and TOP. And she did it, friends remember, in ways which provided inspiration, teaching and help to others.

Bockting, who died in September, is being honored by the Center she served for 16 years with the renaming of the Outstanding Secretary Award. It will henceforth be known as the Marilyn Bockting Secretarial Excellence Award. "By renaming this award in her honor, it is hoped that her remarkable accomplish-

ments at JSC and in the Clear Lake area will not be forgotten," said Awards Office Chief Duane Ross.

Bockting, who worked at JSC from 1963 to 1979, was well known throughout the JSC community and was a charter member of such groups as the Clear Lake Area Chapter of the American Business Women's Association and the JSC Federal Women's Committee.

The Marilyn Bockting Secretarial Excellence Award will be given monthly to outstanding secretaries at JSC. The first recipient of the renamed award was Rose Mary Cox, secretary to the Chief, User Support Branch, Data Processing Systems Division.

Bockting held a variety of positions during her career, beginning

as a clerk-typist in the Office of Naval Intelligence. She also worked as a secretary and executive secretary for Army Intelligence and at the Douglas Aircraft Company. Later, she worked for James C. Elms of the Ford Motor Co.

When Elms, at that time the Director of Space and Electronics for Ford, was recruited to become Deputy Director of the Manned Spacecraft Center in 1963, Bockting came with him as his administrative assistant.

In 1967 she went to work for George Low, who became manager of the Apollo Program after the Apollo 204 fire. Many of her first weeks on the job were spent helping Low at the Cape.

Three years later, Bockting worked



Marilyn Bockting

as administrative assistant to Donald K. "Deke" Slayton, then the Director of Flight Crew Operations.

In 1973, Bockting was named Assistant Manager of the Program

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## Bulletin Board

### IEEE plans video conference

The Galveston Bay Section of the IEEE will present a one day video conference May 8 at the Gilruth Recreation Center. The conference is titled "High Technology Production: Strategies and Applications," and will be held from 9:30 a.m. to 3:30 p.m. The registration deadline is May 1 and there is a fee to attend. For more information, call Ray Baker, x4509.

### Vintage radio show and auction set

The Houston Vintage Radio Association will sponsor the seventh annual show and auction from 10 a.m. to 5 p.m. May 3 at the Memorial City Shopping Center, I-10 at Gessner. Radios from the early wireless and crystal set era and early transistor models will be on display. The show is intended to demonstrate the evolution of broadcast receivers up to the early 1950s, including early televisions. The public auction will begin at 1:30 p.m. For more information, call Dave Moore at x2886 or 484-1705.

### JSC Bicycle Club forms

The JSC Bicycle Club, created to promote bicycle safety, awareness and enjoyment, meets at 7 p.m. on the first Tuesday of each month at the Freeman Memorial Library in Clear Lake City. On most weekends, the club conducts group bicycle rides of from 10 to 100 or more miles. Meetings feature guest speakers, news of upcoming tours, races and other information. Membership is open to the public. For more information, call Kitty Barnes at 480-9100.

### USAF Band to hold free concert

The United States Air Force Band and the Singing Sergeants will present a special concert in Houston April 21 at the Music Hall. The free performance begins at 8 p.m. For information and free tickets, call 954-6808 or 954-6809.

### AIAA's symposium to be May 9 at UH-CL

The Eleventh Annual AIAA Technical Symposium, sponsored by the Houston Section of the American Institute of Aeronautics and Astronautics, will begin at 9 a.m. May 9 at the University of Houston-Clear Lake. Over 140 technical presentations are planned on such topics as communications, energy systems, software, materials and structures, rendezvous and docking systems, space systems and operations, test and simulation, biosystems, space station health and habitation, computer graphics and others. There will be eight concurrent morning and afternoon sessions. Registration begins at 8:15 a.m., and the fee of \$2 for AIAA members and \$3 for non-members includes a book of abstracts. That evening, JSC Director of Research and Engineering Dr. Aaron Cohen will discuss the next 15 years of space exploration during an AIAA dinner meeting at the Gilruth Recreation Center. Cohen also is the general chairman for the technical symposium. The evening activities begin with a social hour at 5:30 p.m., followed by dinner at 6:30 and the program at 7:30. For dinner reservations, call Pat at 333-4150, x267; Debbie at 333-0701; Joni at 280-1500, x3499; or Dee Dee at 333-6942. Reservations must be made by noon May 5. For more information on the symposium, call Stephanie Vickery at 333-6407.

### Spring concert to be held in Bldg. 2

Richard Nunemaker on clarinet and saxophone and Lyn Reyna on piano will present selections from Gershwin, Brahms and Maurice during a "Concert for Spring" April 28 in the Bldg. 2 Visitor Center auditorium. The concert begins at 11:30 a.m. and is open to all employees and visitors.

### Musgrave to address LPI Seminar

Astronaut Dr. Story Musgrave will present "A Personal View of the Earth from 200 Miles Up" at 3:30 p.m. April 25 at the Lunar and Planetary Institute. Musgrave, a member of the flight crews for STS-6 and STS 51-F, will make the presentation as part of the regular LPI Seminar Series. The talk will be held in the Berkner Room at LPI.

## Gilruth Center News

Call x3594 for more information

**Almost anything goes**—Teams may now enter this competition, the finals for which will be held May 3 at the JSC Picnic. Teams consist of four males and four females. The contest has four events and the rules are known only to the Rec Center staff. The cost is \$10 per team and T-shirts will be given. Trophies will go to the winners. Dates of the preliminary contests will be predicated on the number of entries. The deadline is April 25. For more details call Helen Munk at x3594.

**Inter-Center run**—Races will be underway in April as runners from JSC represent the Center in the annual Inter-Center run. The 10 kilometer and 2 mile runs will be held beginning at 5:15 every Monday and Thursday night through April 24. One Saturday race will be held at 8 a.m. April 19.

**Intermediate tennis mini-camp**—This mini-camp will help you develop your strokes and net play. The three-day session meets from 5:15 to 6:45 April 22 through 24. The cost is \$20 per person.

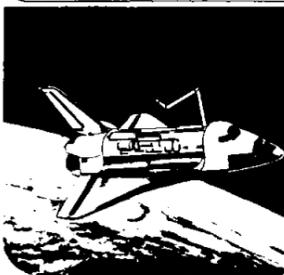
**Calligraphy**—Learn basic italic and old English alphabets and lettering. This 6-week class meets from 7 to 9 p.m. beginning April 22. The cost is \$20 per person.

**Speedreading**—Learn the techniques for greater reading speed and comprehension in this class, which meets from 6:30 to 8:30 p.m. beginning April 22. This Tuesday class meets for 7 weeks and costs \$70 per person.

**Jazzercise**—Designed to develop total body fitness, this class gets you into shape through a series of stretching and limbering exercises followed by a vigorous workout. The six-week course begins April 21 and meets Mondays and Wednesdays from 4:25 to 5:25 p.m. The cost is \$25 per person.

NASA  
Lyndon B. Johnson Space Center

## Space News Roundup



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Editor ..... Brian Welch



Members of the 1986 JSC Picnic Committee gathered recently to present a savings bond to Claudia Edwards, who suggested this year's picnic theme. Pictured are: (fourth row, left to right) Capt. Robert Reese, Britt Walters, Dick McMinimy and Larry Davis; (third row), Charlotte Lawrence, Karen Newton, Monica Kruest, Helen Munk and Susan Starkweather; (second row), Gloria Salinas, Mary Wylie and Fern Deans; (front row) Mike Fohey and Claudia Edwards.

## JSC picnic planned for May 3

The JSC Employee Activities Association is inviting all members of the JSC community to a "Sesqui-Spectacular Picnic" May 3 at the Gilruth Recreation Center.

The picnic will be held from 11 a.m. to 5 p.m.

The annual event often brings out more than 1,000 civil service and contractor employees and their families for a day of games, music and old-fashioned Texas barbeque.

The theme for this year's picnic, chosen to highlight the Texas Sesquicentennial, was suggested by Claudia Edwards of the Aircraft Systems Quality Assurance Branch, Aircraft Operations Division. Edwards was awarded a savings bond for her winning suggestion.

This year's picnic will include familiar favorites from past years: a dunk tank, bingo, a water balloon

toss, an egg toss, a horseshoe tournament, clowns, rides for the kids, booths, a face painter, a palm



reader, video games, the Borden's ice cream truck and the Almost Anything Goes contest.

Also included is a barbeque dinner with trimmings and refresh-

ments. The dinner will be served from noon to 3 p.m.

Parking for the picnic will be organized much as in past years. Employees will be asked to park in the parking lot next to the Fire Station, Bldg. 25, or in the north parking lot of Bldg. 30. Shuttle buses will run back and forth from the lots to the picnic area at the Gilruth Center.

Persons with handicapped parking passes may use the lot at the Gilruth Center. For information on obtaining special passes for the picnic, call Dick McMinimy at the Security Office, x4841.

Tickets are \$3.50 for adults (13 and over) and \$2.50 for children. Picnic tickets will go on sale after April 14 at the JSC Exchange Store in the Bldg. 11 Cafeteria. Ticket sales end April 30.

## Astronaut memorial to be built

NASA and the Astronauts Memorial Foundation, Inc. have announced plans to build a memorial at the Kennedy Space Center dedicated to astronauts who have lost their lives while flying, training or awaiting assignment to fly for the space agency.

NASA will provide a site for the memorial at the Kennedy Space Center, while the foundation will raise funds for the design, construction and perpetual care of the memorial.

U.S. Sen. Jake Garn and U.S. Rep. Bill Nelson, both of whom have flown on the Space Shuttle, are co-chairing national fundrais-

ing efforts for the private, non-profit foundation, based in Cape Canaveral, Fla.

Once the memorial is completed, education will become the focus of the foundation's efforts, according to the group's organizers. A scholarship fund will be established to support students pursuing careers in the fields of teaching, engineering and science.

The memorial will honor the Space Shuttle *Challenger* crew, including Francis (Dick) Scobee, Michael Smith, Judith Resnik, Ronald McNair, Ellison Onizuka, Christa McAuliffe and Gregory Jarvis; the Apollo crew who died

when a fire swept their spacecraft during a launch simulation in 1967, including Virgil (Gus) Grissom, Edward H. White II and Roger Chaffee; Gemini IX astronauts Charles Bassett and Elliott See, who were killed in a crash of their T-38 trainer aircraft in 1966; Theodore Freeman, who died in a T-38 accident in 1964; Clifton Williams, who also died in a T-38 accident in 1967, and Edward Givens, who was killed in an automobile accident in 1967.

Contributions to the Astronauts Memorial Foundation, Inc., may be addressed to P.O. Box 285, Cape Canaveral, FL 32930-0285.

## 61-G destacking underway

Work has begun at the Kennedy Space Center to destack the solid rocket motors intended for use on Space Shuttle mission 61-G, which was to have deployed the Galileo spacecraft for a trip to Jupiter.

The effort is a data-gathering activity in support of the *Challenger* accident investigation.

The principal objective of the destacking exercise is to gather information to assess the preflight conditions in and around the vicinity of solid rocket motor field joints. Of primary interest will be the condition of the field joint "O" rings.

Inspections during destacking also will focus on the putty used in the joints and on correlating rocket motor case ovality, or "roundness," with any assembly damage.

Assessments also will be made on the degree of clevis gap-opening resulting from stacking and assembly and the degree of propellant slumping that occurs as a result of vertical stacking.

Any relevant data from the destacking inspections that may be useful in the investigation of the

*Challenger* accident will be assembled by the NASA 51-L Data and Design Analysis Task Force and provided to the Presidential Commission on the Space Shuttle *Challenger* Accident.

Operations to remove the external tank from the 61-G stack were underway last week at KSC. The Orbiter *Discovery* was moved temporarily out of the Vehicle Assembly Building storage bay to make room for the 61-G external tank.

In parallel with the 61-G destacking operations, the KSC Shuttle processing team will proceed with

approved modifications on the Orbiters.

This work includes major modifications to the orbiter *Discovery* to equip the ship for missions that will use the Centaur upper-stage, structural reinforcement of the Orbiter's wings, and installation of special instrumentation for future launches from Vandenberg Air Force Base, California.

Other modifications planned for the Orbiter's *Discovery*, *Columbia* and *Atlantis* include previously approved mods and equipment upgrades that were deferred until time was available.

## Columbia to support VAFB

(Continued from page 1)

installation of main engines, auxiliary power units and orbital maneuvering system pods in parallel with structural inspections, approved modifications and ferry flight preparation.

The decision to assign *Columbia* to near-term Vandenberg site validation testing will support extensive

modifications of *Discovery* at KSC, baselined to fly the west coast missions.

*Discovery* will remain at KSC over the summer undergoing modifications to equip it for Centaur missions, completing planned wing structural strengthening and installation of additional test instrumentation desired for the initial Vandenberg launches.

# Chang-Diaz to be awarded Medal of Liberty

Dr. Franklin R. Chang-Diaz will be one of the first 12 recipients of the newly created Medal of Liberty.

Similar in prestige to the Medal of Freedom, the Medal of Liberty was created to recognize the accomplishments of naturalized American citizens.

The medals will be presented by President Ronald Reagan July 3 aboard the aircraft carrier USS John F. Kennedy in New York Harbor at the official unveiling of the refurbished Statue of Liberty.

Chang-Diaz, the first NASA Hispanic-American astronaut to fly in space, was selected on March 1 as one of the 12 recipients. His first spaceflight was STS 61-C in January 1986.

"His selection reflects his considerable accomplishments and the importance with which the space program is perceived in our society," said NASA Assistant Administrator for Equal Opportunity Programs Harriett G. Jenkins. "The honor serves as a tremendous inspiration to people throughout our nation."

Chang-Diaz was born April 5, 1950 in San Jose, Costa Rica. He is the only Medal of Liberty recipient of Hispanic background in the group of 12. He also is the youngest recipient and the only career federal employee of the group.

He holds a bachelor of science in mechanical engineering and a



Dr. Franklin Chang-Diaz

Ph.D. in applied plasma physics. Chang-Diaz was chosen as an astronaut candidate in January

1980 as part of Astronaut Group 9. He completed his training in August 1981.

Other recipients of the Medal of Liberty and their country of origin are: former Secretary of State Dr. Henry Kissinger, Germany; architect I.M. Pei, China; composer Irving Berlin, Russia; University of Chicago President Dr. Hannah Holburn Gray, Germany; psychologist Dr. Kenneth Clark, Jamaica; author Elie Wisel, Rumania; oral polio vaccine developer Dr. Albert Sabin, Russia; New York Times Pulitzer Prize winner James Reston, Scotland; corporate executive Dr. An Wang, China; violinist Isaac Pearlman, Israel; and entertainer Bob Hope, England.

Selection of the 12 was delegated to the Medal of Liberty Committee, a blue ribbon panel chaired by Chrysler Corp. Chairman Lee A. Iacocca. Researchers and historians from the committee researched a large number of records to obtain names and qualifications of naturalized American citizens. The vast list was narrowed down to 200 names from which the Committee chose the final 12.

Members of the Medal of Liberty Committee include author Alex Haley, Prof. Barbara Jordon, San Antonio Mayor Henry Cisneros, Sen. Edward Kennedy, NBC Chairman Grant Tinker and Baseball Commissioner Peter Ueberhoff.

## 51-F controllers, LEASAT team cited

# National Space Club honors JSC employees

The flight controllers credited with quick action during the STS 51-F abort to orbit were honored by the National Space Club March 21 at the Goddard Memorial Dinner.

Also honored were the members of the JSC-Hughes team who contributed to the LEASAT 3 salvage mission on STS 51-I.

The 1986 recipients of the Eagle Manned Mission Success Award, presented for significant contributions to a manned space flight, were Jenny M. Howard, Cleon Lacefield and Brian D. Perry, all of JSC's Mission Operations Directorate.

The award, created in 1984 through a donation from International Technology Underwriters, honors those who contribute to the success of U.S. manned space flight missions. The first recipients, Astronaut Dale A. Gardner and Jeremiah O. Salvatore of the Hughes Aircraft Co., were honored for their contributions to the satellite retrievals on STS 51-A.

Howard, Lacefield and Perry were members of the Ascent/Entry Team in the Mission Control Center for STS 51-F. Howard was the Booster Systems Officer, Lacefield was the Flight Director and Perry was the Flight Dynamics Officer.

When an engine temperature sensor probe malfunction caused a com-

puter to shut down one of the three main engines during the ascent, the 51-F crew was instructed to execute an abort to orbit. (Space News Roundup, Aug. 9, 1985, page 1.)

Determining that an ATO was possible, and that faulty sensor readings should be ignored, were the two key decisions which had to be made during the ascent. Later, Mission Operations Director Gene Kranz said, "Everybody did what they were supposed to do, correctly, quickly and crisply."

All three flight controllers said they considered the Eagle Award to be for a team effort. "This was a team effort," Lacefield said. "Even though the other members of the team did not contribute directly to this call, they were just as qualified. I just wish the entire team could have been recognized."

"I think all three of us feel that way," Howard added. "Many people make very important contributions to almost every decision which is made in Mission Control, and certainly that was the case during the 51-F launch."

Perry said all flight controllers face the kinds of decisions which were called for on 51-F. "A lot of people make decisions which are just as hard as the one's we made that day. The ATO was perhaps a bit more visible, but that's the only

difference," he said.

Lacefield now works for Aerojet Tech Systems Co. in Sacramento as part of a design group studying next generation rocket engines. He grew up in California and earned a BS in aeronautical engineering from California Polytechnic at San Luis Obispo. After flying A-7s for the Navy, Lacefield came to Ford Aerospace in Houston in 1975. He became a federal employee in 1977, working as a booster systems officer, and was later named Head of the Guidance and Control Section, Systems Division. He became a Flight Director in 1983.

Perry grew up in Iowa and earned a BS in aerospace engineering from Iowa State University. He was an intern at JSC in the summer of 1979, working in the Flight Dynamics Section, Flight Design and Dynamics Division. Partly because of that experience, he emphasized orbital mechanics in his later schooling, and came to JSC full time in August 1980. He worked in the training and procedures areas until January of 1984, when he rejoined the Flight Dynamics Section and began supporting missions as a flight dynamics officer.

Howard grew up in Indianapolis and earned a BS in aerospace engineering from Purdue University in 1978. She was a cooperative



Lacefield, right, and other officials discuss the 51-F abort to orbit.

education student at the Langley Research Center in 1977 and 1978. After graduation, she worked in the VSTOL wind tunnel at Langley for one and a half years and then came to JSC in April 1980, where she was employed by the Booster and Upper Stage Systems Section, Systems Division. She was the prime back room operator for the Booster position for STS-4, and went to the front room position for

the first time on STS-9.

Also honored were the many people at JSC and at Hughes who contributed to the 51-I LEASAT salvage mission. The Nelson P. Jackson Aerospace Award, which has been given by the Space Club since 1960, went to this team for "engineering excellence leading to the highly successful on-orbit repair of the LEASAT 3 communications satellite."

# JSC renames award for Bockting

(Continued from page 1)

Administration Office, and in 1975 was promoted to Manager, heading an organization which provided administrative services to all Shuttle Program Office employees.

During her career, Bockting presented secretarial training seminars to new clerical employees, worked closely with the Employee Development branch on special programs for disadvantaged employees and worked with the Civil Service Commission on a 14-week training course on the behavioral aspects of secretarial practices.

Bockting was a charter member and president of the Clear Lake

Area Chapter of the American Business Women's Association (ABWA) and was one of the ABWA's top ten women of the year in 1975. Bockting also was involved with the JSC Federal Women's Program, and served as the first editor of the FWP's local newsletter, The Network.

In 1983, the Clear Lake Area AWBA chapter honored her as the recipient of the coveted Abbey Award, which is presented to the person who has done the most to advance women's careers by helping others or by setting a personal example.

She also helped form the Space-land Toastmasters Club, served as

its first educational vice-president and later as president. In 1979, she was elected Lt. Governor for the Eastern Division of District 56 of Toastmasters International. In 1980, she was elected to the Board of Directors of the Houston Speaker Association.

Those are some of the official citations. Friends and fellow workers remember the human side as well.

"I would say she was my only female mentor here," said Astronaut Office Administrative Officer Estella Gillette. "She didn't mind sharing her experience, and during the early part of my career, I saw her as

someone who had done everything I wanted to do."

Then working in the Program Administration Office, Gillette said she "cut a deal" with Bockting. "I said, 'Look, I'm trying to learn, and if you'll let me share in your work, it will help both of us.' Marilyn was glad to do it. She let me learn the system and was always there if I needed advice."

Lois Bradshaw, who succeeded Bockting as Manager of the Program Administrative Office, said she was a highly motivated and resourceful person. "She did not have a degree," Bradshaw said, "but she was able to use ingenuity

and drive to learn how the system works and how to work things."

"Marilyn's successful NASA career started in the secretarial ranks," said Virginia B. Hughes, Manager of the Facilities Design Division Planning Office. "Although she progressed, most deservedly, to the position of Manager of the Program Administrative Office, she never forgot her earlier days as a secretary. She also was very aware of those outstanding secretaries we have at JSC and she constantly encouraged and role modeled for them. I think it is most proper that the Outstanding Secretary Award be renamed in her memory."

## Bridges reassigned by USAF

NASA Astronaut Roy D. Bridges (Col., USAF) has been reassigned by the Air Force to become Commander of the 6510th Test Wing, Edwards AFB, Calif., effective next month.

Colonel Bridges has been an astronaut since May 1980. He was pilot of the Orbiter *Challenger* on mission 51-F, the third flight of Spacelab, in July and August 1985. He served as capsule communicator (CAPCOM) in Mission Control on the fourth through the seventh Space Shuttle flights.

Colonel Bridges is a graduate of the USAF Test Pilot School at Edwards and has flown more than 4,000 hours in 21 kinds of aircraft and spacecraft. During a previous assignment at Edwards from 1970-75, he was involved in a number of aircraft test projects, including the A-X flyoff and the subsequent test and evaluation of the A-10.

As commander of the 6510th, Colonel Bridges will be involved in test and development of current and next-generation aircraft, including B-1 bomber,



Roy D. Bridges

T-46 trainer, HH-60 helicopter and F-15 and F-16 fighters.

## Cheatham passes away

The many friends of longtime JSC employee Donald Cheatham were saddened to learn of his death April 8.

Cheatham retired from JSC in 1980 as operations Integration Manager for the Space Shuttle Program Office. More than 500 JSC employees attended his retirement party.

Cheatham was a naval aviator in the Pacific during World War II and served in the Naval reserve until 1970. He went to work for the National Advisory Committee for Aeronautics, NASA's predecessor agency, in 1947.

During his 33-year NASA career, he participated in the design of the Lunar Module and served as chief

of guidance and control for the Apollo Program. He also was involved in the development of the docking control system for the Apollo Soyuz Test Mission.

After his retirement in 1980, he went to work for McDonnell Douglas.

Cheatham was the author of numerous technical papers and the recipient of many achievement and service awards.

Services were held April 10 in Lakeway, Texas, where he was residing at the time of his death.

The family requests that those who desire should make contributions in his memory to the American Heart Association or the American Cancer Society.

## New in the Library

The JSC Technical Library is located in Bldg. 45, Room 100, and is open from 8 a.m. to 4:30 p.m. Monday through Friday. The general information number is x4048. New books received in the library as of Mar. 5 include:

*AIAA Shuttle Environment and Operations II Conference, Nov. 13-15, 1985, Houston, Texas, Collection of Papers*, by AIAA.

*Artificial Intelligence: Bibliographic Summaries of the Select Literature*, by H.M. Rylko.

*Basis of Communication and Coding*, by W.G. Chambers.

*COSMIC Software Catalog, 1985 edition*, by NASA. (Reference)

*Creep of Crystals: High-Temperature Deformation Processes in Metals, Ceramics, and Mineral*, by J.P. Poirier.

*Diffusion, Mass Transfer in Fluid Systems*, by E.L. Cussler.

*Directory of Computer Software*, by NTIS.

*Handbook of Computer-Aided Composition*, by A.H. Phillips.

*Heuristics: Intelligent Search Strategies for Computer Problem Solving*, by J. Pearl.

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*Law of Federal Negotiated Contract Formation*, by A.K. Gallagher.

*Making Space Work for Mankind: Proceedings of 19th Space Congress*, by Canaveral Council of Technical Societies.

*The Moon and the Planets: a Catalog of Astronomical Anomalies*, by W.R. Corliss.

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*Proceedings of the 27th Colloquium on the Law of Outer Space*, by AIAA.

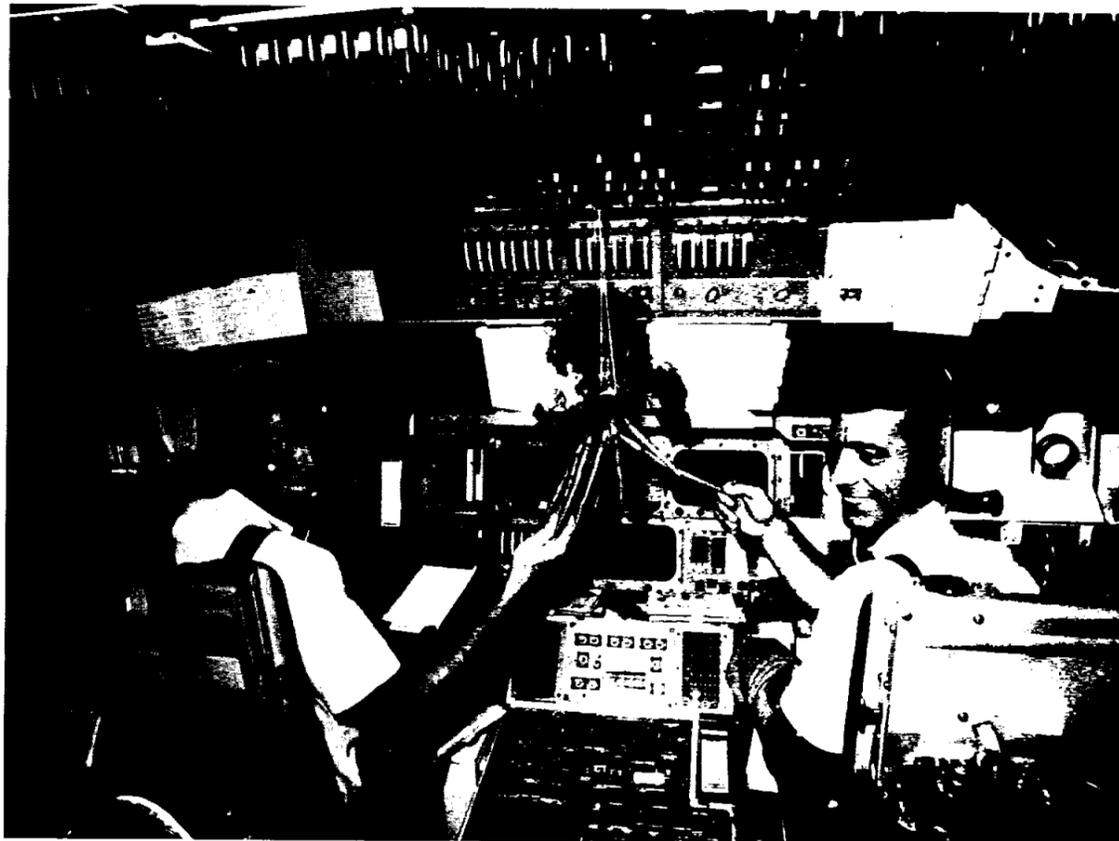
*Quality Control, Reliability, and Engineering Design*, by B.S. Dhillon.

*Reliability and Maintainability in Perspective: Practical, Contractual, Commercial, and Software Aspects*, by D.J. Smith.

*Space Station: an Idea Whose Time Has Come*, by T.R. Simpson.

*Space Station Program Description Document, Book 1-4, 6-7*, by NASA. (Reference)

*Telecommunications Systems and Services Directory*, by M. Conners.



"Give that man a carrot," Mike Coats has been known to say when things are going well in simulations. After a few days away from the Shuttle Mission Simulator, Coats and Pilot John Blaha were welcomed back by their SMS training team with this bunch of carrots. "It's been a running joke for the past several months," said team leader Bryan Austin. Other members of the training team are Jim Neumann, Jim Burton and Tony Patino.

## Roundup Swap Shop

All Swap Shop ads must be submitted on a JSC Form 1452. The forms may be obtained from the Forms Office. Deadline for submitting ads is 5 p.m. the first Wednesday after the date of publication. Send ads to Roundup, AP3, or deliver them to the Newsroom, Bldg. 2 Annex, Room 147. No phone in ads will be taken.

### Property & Rentals

Sale: Piper's Meadow 3-2-2, by owner, low equity, assume. Wagner, x4416 or 488-4114.

Sale: 2 BR house 2 mi. from Texas A&M campus, adjoining trailer lot, both for \$53,000. Larry K., x4614 or 946-4059.

Sale: 4-2-1 older home on 6 acres, about 6 mi. from Crockett, TX, \$15,000. 486-9760.

Sale: Lake Livingston, Memorial Point, lakeview lot, near pool/tennis/restaurant, paved streets, sewer/water/util., 24 hr. security, sell for assessed value. 946-3945.

Sale/lease: Nassau Bay 2-2.5 townhome, 2 blks. to JSC, covered parking, all appliances. \$62,500 or \$550/mo. Tom Milton, 480-7379 or 488-5267.

Sale: Friendswood 3-1.5-1, near schools, ex. cond., \$47,000. 482-7546.

Sale: Alvin 3-2, den, study, formal dining, FPL, large lot, quiet location, schools, 9% assume. Kaye, x5222 or 585-3570.

Sale: Inverness at Walden timeshare red week 37, 1986 week space-banked with RCI, 3 yrs. RCI bills paid, '86 maintenance bills paid, assume at \$162.20/mo. Mac, x2013 or 488-3976.

Lease: Egret Bay 1-1-2, FPL, W/D, two pools, drapes, covered parking, \$350. Actkinson, x3781 or 482-7061.

Sale: Friendswood 3-2-2, FPL, fans, miniblinds, drapes, stove/microwave, cath. ceilings in LR and MBR, large fenced yd., great neighborhood, assumable 10.5% FHA, \$76,000. 996-0823.

Lease: Pebblebrook 1-1 condo, El Lago, W/D, refrig., FPL, new paint/carpet, pool, tennis, \$300/mo. Tom, x5526 or 335-1514.

Rent: 3 story, 2 BR + loft townhouse on Clear Lake, A-frame design, rough cedar beams & staircase, FPL, panoramic view, boat slip optional, \$850/mo. Larry Cullert, (415) 527-9587 or (415) 642-4220.

Sale: League City 3-2-2, 2 yrs. old, landscaped, deck, extras, assume 11% FHA, \$699/mo. 334-4361.

Sale: Meadowbend 3-2-2, 10.5% VA, low 60's, pay closing only. Dean, 488-7032.

Lease: Meadowbend 4-2-2, FPL, fenced, ex. cond., \$585/mo. + dep. Dean, 488-7032.

Lease: CLC University Green townhouse, ex. cond., 2-2.5-2, FPL, W/D, refrig., miniblinds, no pets, \$650/mo. 488-1036.

Lease: CLC 1 BR condo, microwave, all appliances, SPL, lg. closets, tennis/ex. room, 2 wks. free rent, some rent applies to down payment if choose to purchase. Jim Briley, x2546 or 488-7901.

Sale: Pearland 3-2-2, drapes/curtains/miniblinds, walk to school, park or library, assume \$75,000 FHA, no equity asked, you pay closing. 485-0076.

Sale: Fleetwood 14 x 80 mobile home, 3-2, storm windows, set up in Alvin park, low equity, assume notes of \$266.50/mo. Wilbur, x3125 or 331-4280.

Sale: 101 acre ranch, Marlin area, old bldgs., tanks, tractors, equipment, fruit trees, oaks, \$775/acre, owner finance. (817) 896-3863.

Rent: New Orleans condo in French Qtr., Jazz Festival week, 4-25 to 5-2. "Penthouse," fantastic view, private rooftop sundeck. Faye, 280-3649 or 480-5656.

Rent: Galveston By-the-Sea luxury condo, completely furnished, 2 BR, sleeps 6, two-day minimum, or by week, month or year. Jay Clements, 474-2622.

Sale: Austin/UT condo, 1-1, on pool, 4 blks. to law school and stadium, assumable, no equity. B. Craig, x4031 or 420-2936.

### Cars & Trucks

'76 VW Super Beetle convertible, ex. cond., 60K mi., \$3,900. 334-3896.

'81 Plymouth Reliant K, 2.2 liter, 4 spd., super AC, 27 MPG, 63K mi., extremely clean, \$2,695. 334-3896.

'85 Dodge Ram Charger, Royal SE, PS, PB, AC, tilt, cassette, 318 V-8, assume payments w/no money down. Barbara, x2168 or 484-5789.

'74 260Z 2+2, auto, 88K mi., one owner, good cond., \$2,500. 996-1691.

'85 300 ZX, 5 spd., fully loaded, low miles, like new. Diana, x4323 or 474-4325.

'76 Volvo 242, 2 dr., 4 spd., AM/FM, AC, 996-9715.

'83 Camaro Z-28, 5 spd., custom interior, new Edge GTs, AM/FM/cassette, very clean, \$6,900 OBO. 488-8543.

'79 Pinto 3-dr. hatchback, 4 spd., body damage — no radiator, good motor, transmission, tires, nearly new clutch, battery, many good parts, \$300 OBO. Rae, x2368 or 458-9342.

'85 Lincoln town car, signature series, all options, digital accessories, sunroof, leather interior, under 20K mi., \$20,000 firm. 363-5070.

'79 Pontiac Firebird, new air, good condition, \$2,400. Ray, x6327 or 554-5434.

'70 Chevy 1/2 ton truck, 110K mi., dependable, \$300. Ray, x6327 or 554-5434.

'84 Buick Skyhawk Ltd., 5-spd., AC, PS, PB, many other options, great mileage, like new. 13K mi., \$6,750 OBO. Tim, x3268 or 280-9774.

'76 Pontiac Gran Prix, white, 1/2 vinyl, PS, PB, tilt, AC, 350 V-8, auto, buckets, console, ex. cond., \$1,400. 333-2395.

'74 Subaru station wagon, regular gas, AC, radio, 4-spd., dependable, new battery, very good tires, 35-40 MPG, \$750 OBO. Bill, x3866 or 331-6260.

'78 Trans Van mini motorhome, 17', sink, stove, refrig., AC, good cond., new brakes and valve job, 55K mi., \$6,000 OBO. Bill Jones, x2628 or 337-5018.

'74 Jeep Cherokee station wagon, 2 dr., 360 engine, good condition, 4WD, \$2,000. Bill Jones, x2628 or 337-5018.

'78 Toyota Celica liftback, 5-spd., AC, PS, AM/FM/cassette, service manual, new rear tires, engine in great shape, \$2,000. 538-2474.

'85 Honda Accord, loaded 14K mi., \$10,500. 332-9101.

'81 Gran Prix Brougham, loaded, ex. cond., customized, \$3,700 OBO. Mike, 280-2627 or 333-2916.

Winebago full size, self-contained motor home, generator, roof air, Dodge chassis, sleeps 6, very good condition, \$5,250. 488-8105.

### Boats & Planes

17' Alumacraft canoe, paddles, life preservers, good condition, \$275. Tony England, x3856.

18' AMF Trac catamaran, trailer and extras, like new, \$4,250. 333-3056.

'76 SeaRay SRV 220 Overnighter, ex. cond., 233 HP Merc., stereo, icebox, stove, sleeps 4, \$7,800. Barbara, x2168 or 484-5789.

'83 Buccaneer 18, trailer, ready to sail, \$3,500; HiFly CS500 windsurfer, \$400. Don, x2261 or 333-4079.

19' square back fiberglass canoe, \$100. Charles, x5531 or 476-5511.

23' cruiser, twin Volvo outdrives, trailer, all in ex. cond., \$5,500. 326-2805.

16' Arrow Glass bass boat, 85 HP Merc., Merc. trolling motor, Lowrance depth sounder, galvanized trailer, \$4,200. 488-8678.

### Audiovisual & Computers

Receiver, turntable, 2 speakers, stereo stand, \$120. Lisa, x6128 or 585-5487.

Commodore 64 with modem, disk drive, computer table, joy stick and 20-30 games, 2.5 yrs. old, \$250. 532-2032.

Commodore 64 software, productivity and educational items. Steve Gorman, x2755.

IBM PC jr., 256K, NEC amber monitor, Model KX-P1091 Panasonic printer, carrying case, adaptor cable, software, system 3 mos. old, \$900. Jay, x3071 or 481-2335.

Dokorder stereo tape deck, 10.5 inch reel-to-reel, 4 trk., 2 channel, 3 motors, 3 heads, dual speed, dual bias, echo, can run smaller reels, used approx. 100 hrs., \$350. 334-1934.

### Cycles

'68 Honda CB350, looks good, runs good, \$250. Bob Alexander, x3393 or 393-1670.

'79 Honda CB 650, ex. cond., crash bars, padded sissy bar, \$95 OBO. 482-4874 after 5 p.m.

### Household

Antique 4 drawer solid maple file cabinet, turn of the century, ex. cond., original brass hardware, recessed side panels, solid wood backstops on brass rails, now refinishing, you choose new finish, \$800. Brian, x5111 or 480-5194.

Antique Victorian bedroom group, w/carved bed, dresser, 2 marble top tables and leather top desk, \$3,200. 488-5564.

Medium pile carpet with padding, ex. cond., reasonable, call for sizes, colors and prices. Steve, 335-1070.

Wooden desk with leather inlays, 9 drawers, dark, 29" H, 23" D, 44" W, good condition, \$65. Tony, x4061.

Contour chair, as seen on TV, never used, electrically controlled seating, various heat and vibration levels, cost \$2,300, sell for \$1,000. 488-1432.

Antique small oak carved sofa, arms drop to make day bed, good upholstery, very rare. Brett Walker, x2245 or x6170.

Medium pile carpet with padding, tan color includes 8 x 12, \$50, 12 x 6, \$125; light blue includes 12 x 12, \$100; approx. total 57 sq. yds., ex. cond. separate or \$300 for all. Steve, 335-1070.

Antique oak and wicker wheelchair, ca. 1890, great conversation piece and very comfortable. Brett Walker, x2245 or x6170.

GE refrigerator, harvest gold, 15 yrs. old, still works, best offer. Bauch, 333-3382.

Sears corner bunk beds, mattresses, dresser, like new, \$325. Bryan, 488-3300 or 333-1019.

Antique breakfast set, table, 4 chairs, very small china cabinet and buffet, \$950. 488-5564.

Tappan gas range, 3 yrs. old, used 1 yr., ex. cond., \$175. Joan, x3057 or 486-1058.

40" round pine dining table, 4 chairs, black leather-like seats, ex. cond., \$200, will deliver locally. Reese, x3336 or 554-5346.

Wooden bunk beds, ladder & rails, Beautyrest mattresses, \$145; antique wooden desk, 4 drawer, \$65; 8 drawer pine dresser, unstained, \$60. Pat, x3083.

Antique Duncan Phyfe table, no chairs, 2 leaves, very nice, \$225; 2 20" bikes, \$20 and \$15. Pat, x3083.

### Wanted

Want to buy electric trains. Don, x2449.

Want to buy baby furniture: crib, car seat, chest of drawers, etc. Ann, x2868 or 538-3683.

Want vocalist for Contraband swing band. Ray, x6327 or 554-5434.

Want tennis partner for lunch/after work. B+ player. Craig, x4231.

Want to buy utility trailer in good condition. 474-2797.

Want roommate to share 3-2-2 house in Forest Bend, 10 min. to NASA, \$225/mo. bills paid. Erickson, x3803.

### Pets

AKC registered beautiful German Shepherd puppies, born Feb. 11, ready for a new home. \$175. Billie, x4105 or 482-4365.

Free kittens, black and black/white, born April 1, ready May 13. Help! Brian, x5111 or 480-5194.

### Musical Instruments

Bach Silver Mercedes trumpet, \$250. Don, x2261 or 333-4079.

### Miscellaneous

Live steam locomotive and tender car w/approx. 100' track. 486-9760.

Wheel rims, 15 x 6, all four for \$80. 482-7546.

Remington 25 electric typewriter, \$65 OBO. Kaye, x5222 or 585-3570.

Ford 240 CID inline 6, 3 spd. auto, exhaust, carb and starter, 1965, 98K mi., can see engine run, \$300 OBO. Kevin, x3601 or 486-4545.

Tonneau cover for Datsun Roadster (1500, 1600 or 2000cc), white, good condition, \$20 OBO. Kevin, x3601 or 486-4545.

Two electric typewriters, great for students, good condition, \$50 each. Lisa, x6128 or 585-5487.

Sears exercise bike, model XC-4000, like new, cost \$160, sell for \$80. Jay, x3071 or 481-2335.

12" turbine with roof jack, used, \$10. Bauch, 333-3382.

Toro lawnmower, 4 HP, 3 spd., power drive, electric start, rear bagger, new engine, \$200. 326-3225.

Engine and transmission from '76 Chevy van, 350 cu. in., 4 bbl.; four first class seats for van, 3 glass slide windows. 485-3025.

Wood working table with two built in wood vices, \$100. Bob Alexander, x3393 or 393-1670.

Enamel and pewter Civil War chess set w/matching board, wood storage case. Purchased \$580.00; sell \$450.00. Kathy Jenkins, 996-6050 evenings.

## Cookin' in the Cafeteria

### Week of April 21 — 25, 1986

**Monday** — Cream of Celery Soup; Braised Beef Ribs, Chicken a la King, Enchiladas w/Chili, Italian Cutlet (Special); Navy Beans, Brussels Sprouts, Whipped Potatoes, Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

**Tuesday** — Beef & Barley Soup; Turkey & Dressing, Country Style Steak, Stuffed Cabbage (Special); Corn Cobbette, Okra & Tomatoes, French Beans.

**Wednesday** — Seafood Gumbo; Catfish w/Hush Puppies, Roast Pork w/Dressing, Pepper Steak (Special); Broccoli, Macaroni & Cheese, Stewed Tomatoes.

**Thursday** — Cream of Tomato Soup; Beef Tacos, BBQ Ham Slice, Hungarian Goulash, Chicken Fried Steak (Special); Spinach, Pinto Beans, Beets.

**Friday** — Seafood Gumbo; Liver & Onions, Deviled Crabs, Roast Beef w/Dressing, Tuna & Noodle Casserole (Special); Whipped Potatoes, Peas, Cauliflower.